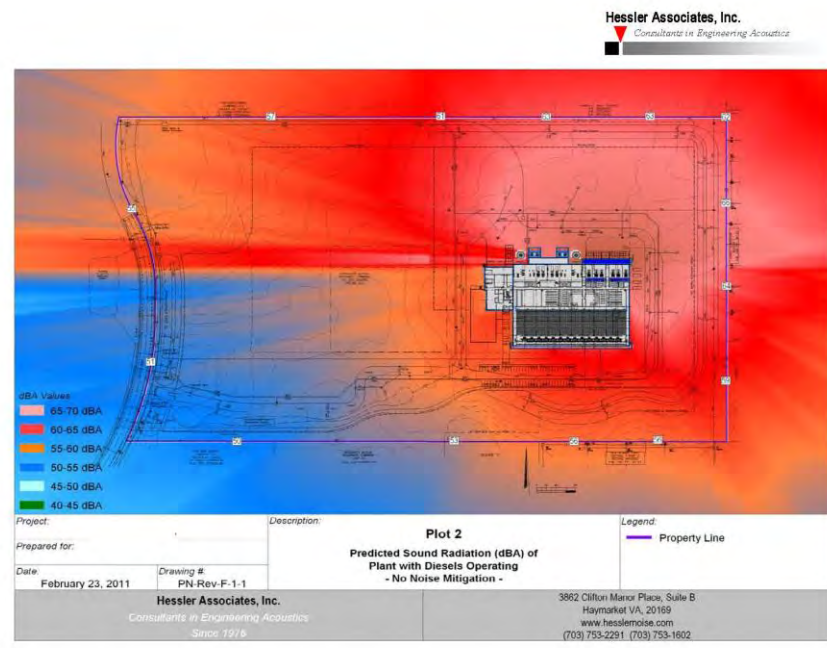


ABOUT
Hessler Associates, Inc.

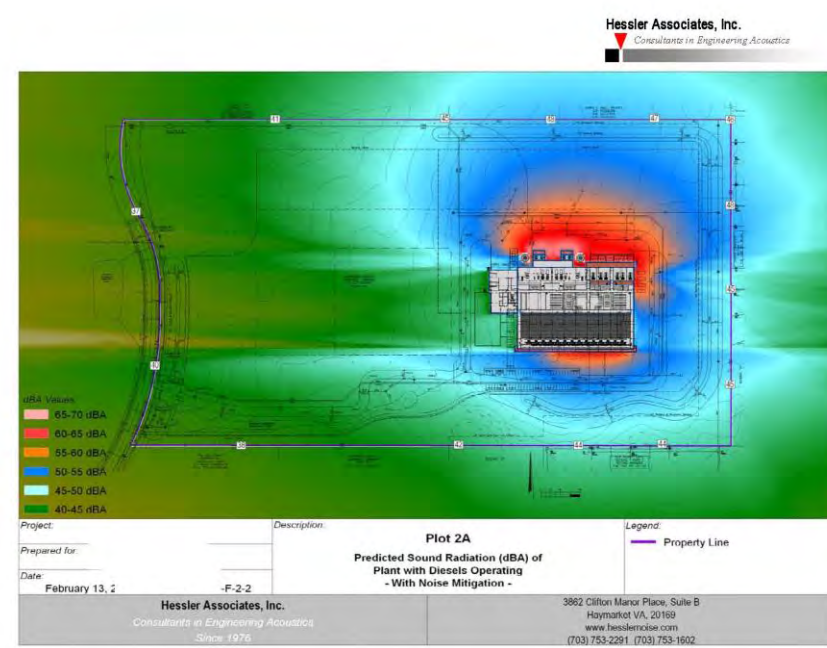
- Founded 1976
- Principal: George F. Hessler P.E., Board Certified INCE
- B.S. The Johns Hopkins University, Baltimore, Maryland
- Principal has nearly 5 decades of experience in Community Noise issues
 - Active member of American National Standards Institute (ANSI)
 - Principal Author: ANSI S12.9 Part 7
 - Co-author ANSI B133.8
- Author or co-author of over 30 peer-reviewed Journal Articles many involving community noise issues
- Hessler Associates has unique acoustical design experience and is a major acoustical designer of Quiet Facilities and Power Plants located around the world



The firm has designed the noise abatement required at data centers located throughout the country and four projects in Loudoun County, Virginia. The above shows an Ohio project designed to 45 dBA to be compatible with adjacent residences.



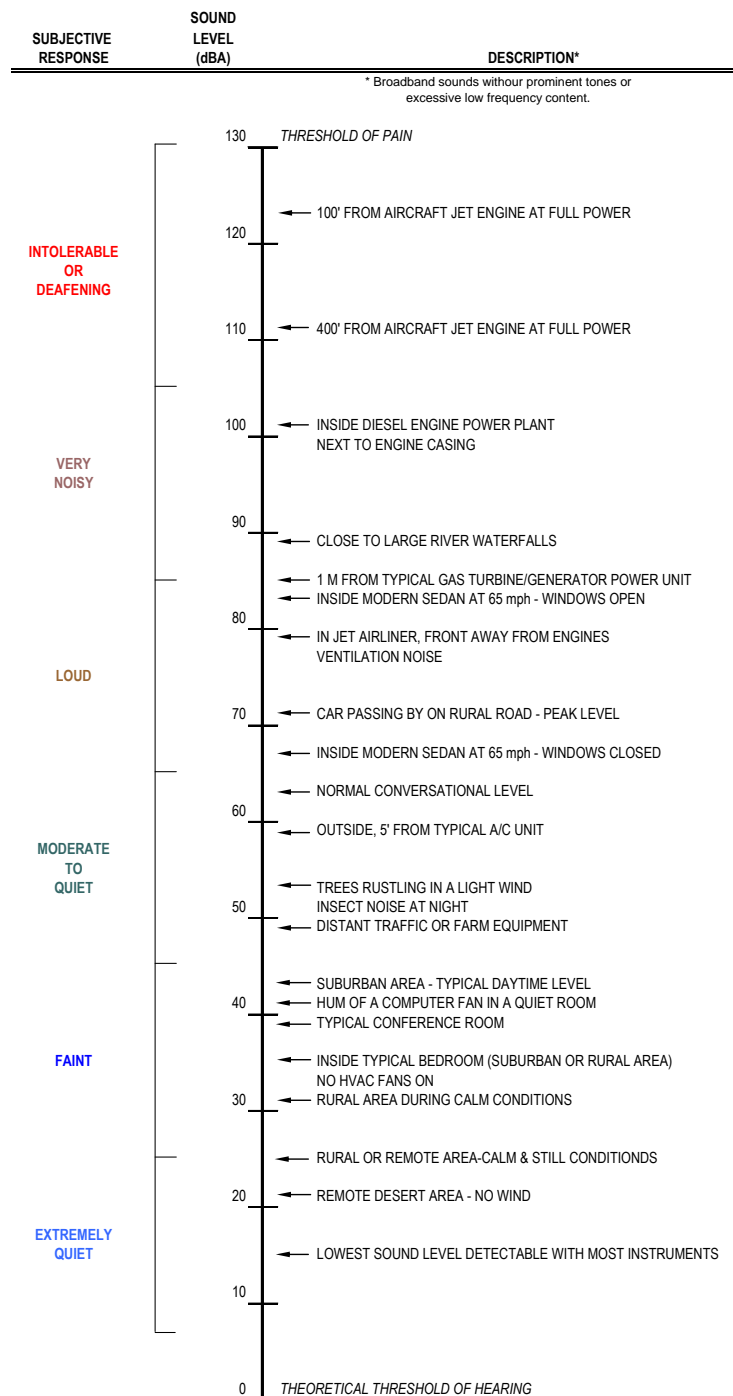
Without

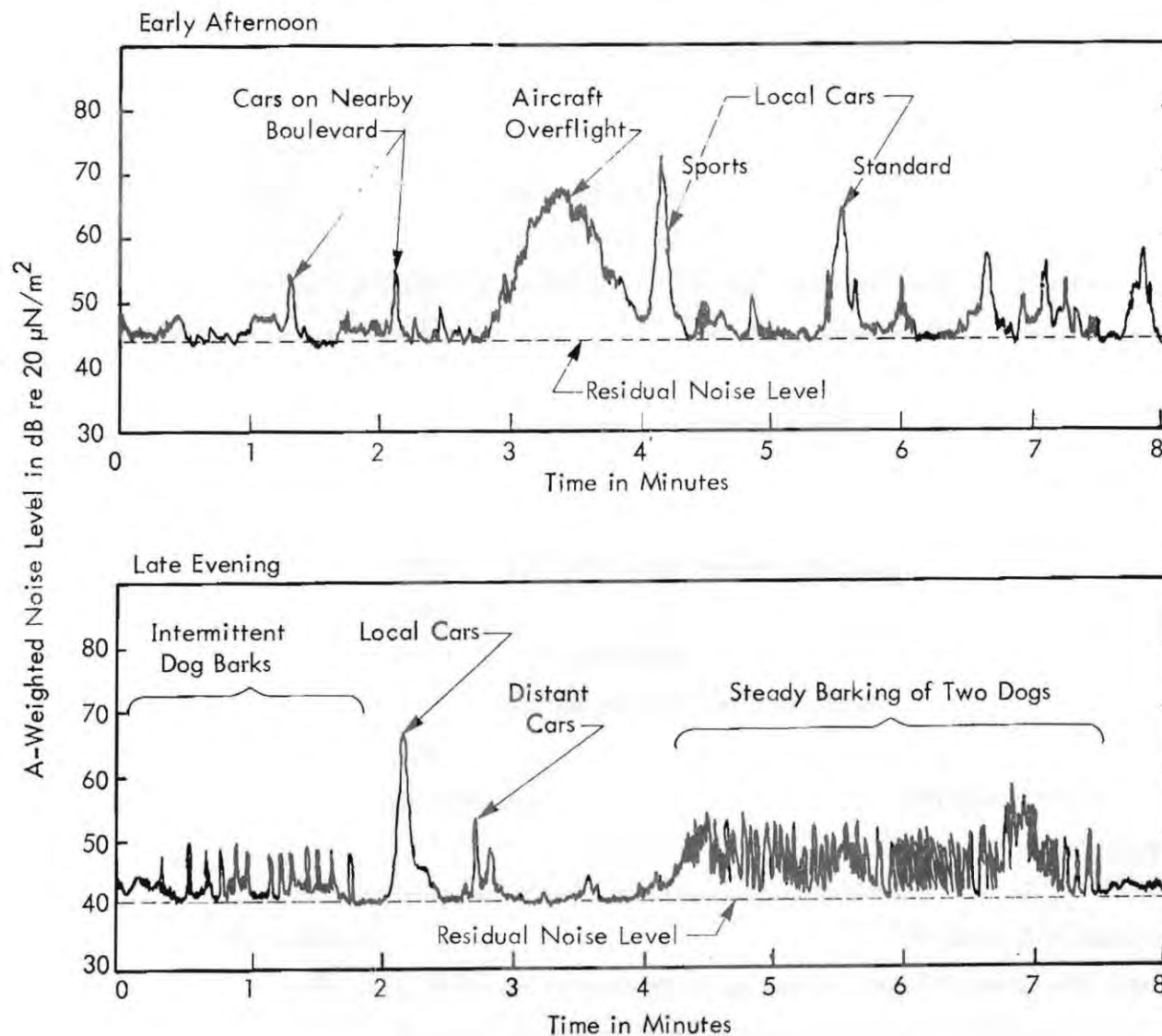


With

Computer noise model of Ohio data center without and with proper noise controls

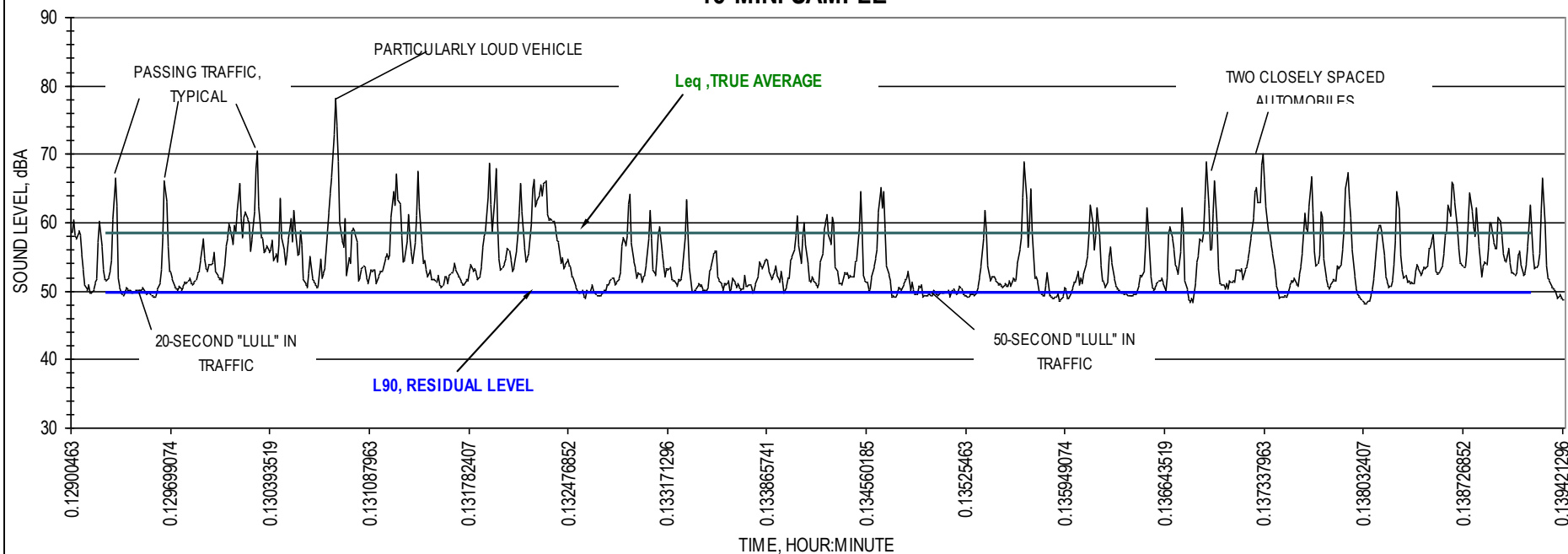
Sound levels are commonly expressed in decibel sound levels, labeled dBA and range from the Threshold of Hearing to the Threshold of Pain for a range of 0 to 130 dBA





Typical Level/Time Trace in Suburban Residential

**PLOT OF INSTANTANEOUS ENVIRONMENTAL SOUND LEVEL IN AN URBAN RESIDENTIAL COMMUNITY FOR A
15-MIN. SAMPLE**



Typical Level/Time Trace in an Urban Residential

Residual Sound
Levels by type of
Residential
Neighborhood

Sound Levels in
Loudoun County



RESIDUAL LEVEL,
dBA — L90

RESIDENTIAL DESCRIPTOR

70

60

50

40

30

20

10

VERY NOISY URBAN RESIDENTIAL, AVERAGE=58 dBA

NOISY URBAN RESIDENTIAL, AVERAGE=53 dBA

URBAN RESIDENTIAL, AVERAGE=48 dBA

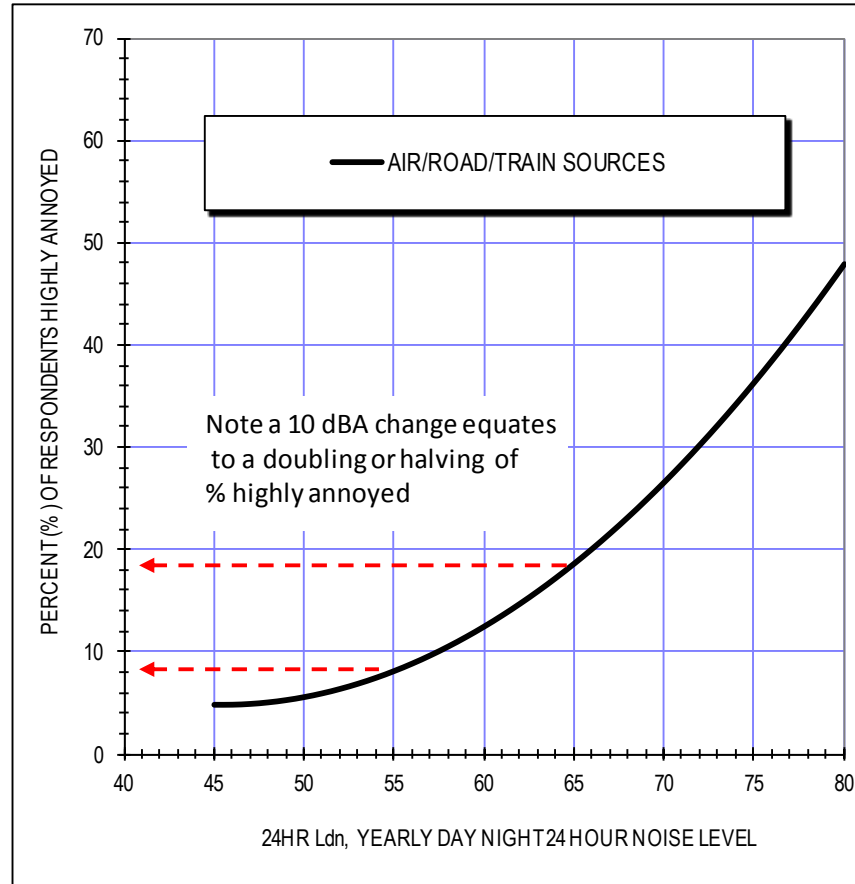
NORMAL SUBURBAN RESIDENTIAL, AVERAGE=43 dBA

QUIET SUBURBAN RESIDENTIAL, AVERAGE=38 dBA

VERY QUIET SUBURBAN OR RURAL RESIDENTIAL, AVERAGE=33 dBA

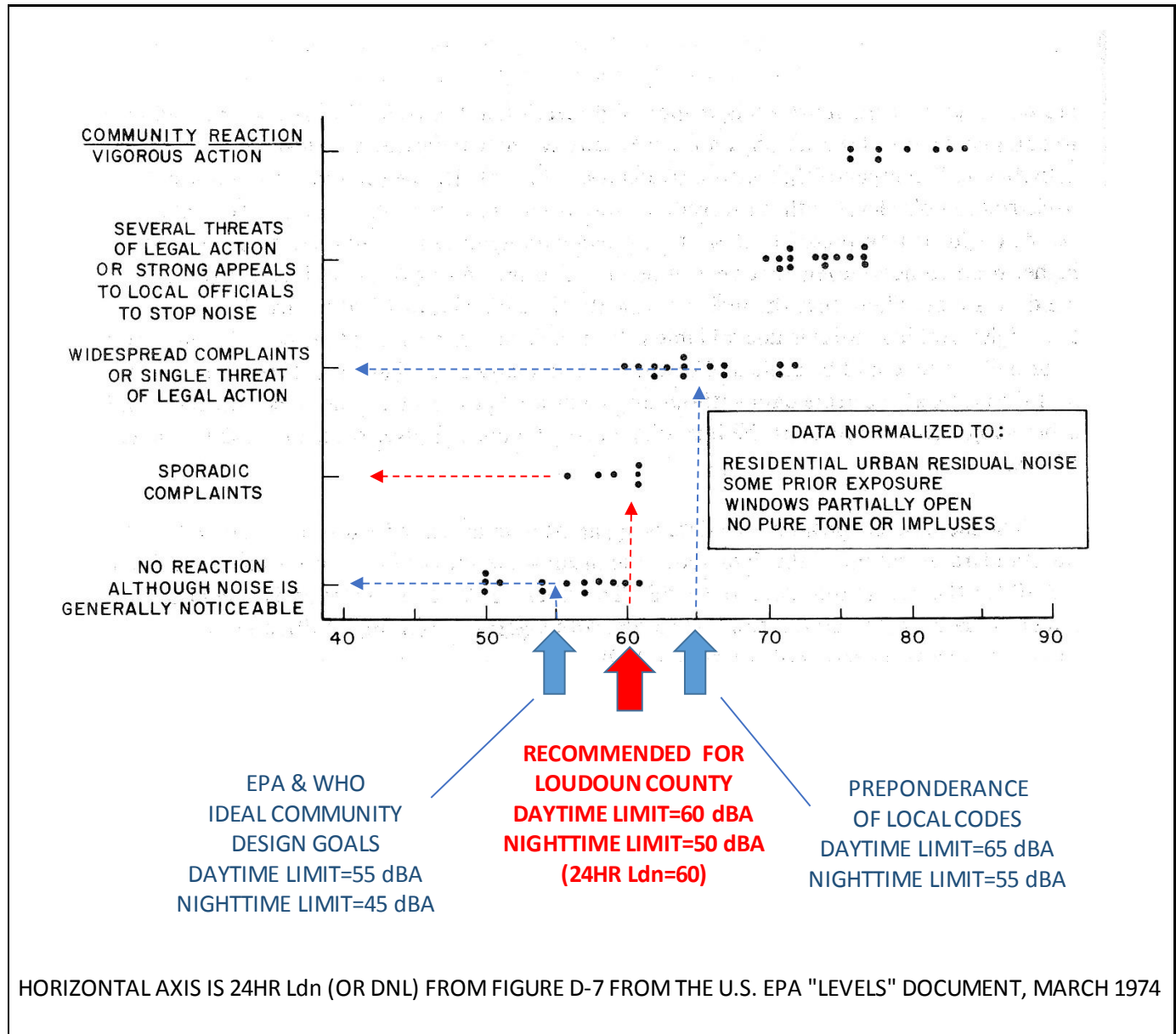
VERY QUIET RURAL OR REMOTE AREA, AVERAGE=28 dBA

The U.S. EPA created a 24 hour community measurement metric called the day/night level DNL or Ldn that has become the worldwide standard for assessing community noise.



The Shultz Curve created by Ted Shultz from a landmark community noise study for
U.S. Transportation sources, the principle content of community noise

In a landmark study the EPA established a nationwide **design goal** of DNL = 55 dBA required to protect the public health and welfare of citizens. This equates to ordinance limits of 55 dBA Daytime and 45 dBA Nighttime



Comparison of Local Day and Nighttime Noise Limits for Continuous Noise at Residential Zones			
	Daytime	Nighttime	Comment
	dBA	dBA	
Loudoun County	55	55	Under review
Prince William County	60	55	
Fauquier County	"Unreasonable Language"		
Montgomery County	65	55	
Fairfax County	60	55	Under review
Town of Leesburg	70	55	Under review
State of Maryland	65	55	
Sate of Virginia	None	None	

Table 2.4-1: Comparison of Local Ordinances to the current Loudoun Zoning Ordinance

The above values reflect economic competitive reality.
 Resident complaints can be expected at these limits and above.

The preferred recommendation for the Loudoun County Noise Ordinance is 5 dBA lower than the above limits at 60 dBA during daytime and 50 dBA during nighttime hours to lower complaint predictions by approximately 50%

SUMMARY SLIDE

1. ORDINANCE SOUND LEVEL LIMITS

(RESIDENTIAL RECEPTORS ONLY)

A. EXISTING ORDINANCE

55 dBA APPLICABLE ANYWHERE AT ANYTIME

B. PROPOSED DRAFT ORDINANCE 1

A-WTD SOUND LEVEL LIMITS THAT CONSIDER COUNTY AMBIENT SOUND LEVELS

	MIXED USE	SUBURBAN	NON-SUBURBAN
APPLICABLE ANYTIME	60	55	45

C. CONSULTANT'S PREFERRED RECOMMENDATION - LOWER NIGHTTIME LEVELS TO REDUCE ANNOYANCE

	MIXED USE	SUBURBAN	NON-SUBURBAN
DAYTIME	65	60	50
NIGHTTIME	60	50	40

2. OTHER CHANGES

DEFINITIONS

DEVELOPED AND ADDED SOUND TESTING METHODOLOGY AND DEFINITIONS
 RECOGNIZES THE WIDE RANGE OF AMBIENT SOUND LEVELS IN THE COUNTY

Thank You For Your Attention.